Legislative Council Questions

March 12, 2015

Follow up Questions

1) Can you provide KPI on average instructional time per teacher for each grade, each School, entire district and State average?

School districts annually provide instructional hour information for the ED 165 state report. The information is collected for grades 2, 5, and 8 only. The state data is posted at the CEDaR website, but is usually 2-3 years old. Please see the spreadsheet below for this information. The table contains last year's data for Newtown (2013-14) but the state data (2010-11) is several years old.

Year/Location	Grade	Art	Comp. Ed.	Lang.Arts	Health	LMS	Math	Music	PE	Science	S.S.	W.L.	Tech. Ed	Cons. Sci.
2010-2011														
STATE	Gr. 2	30	19	491	19	21	199	30	36	72	67	43		
2013-2014														
NEWTOWN	Gr. 2	26	20	519	17	22	210	22	50	37	37			
2010-2011														
STATE	Gr. 5	31	23	427	22	21	199	33	41	95	86	50	14	15
2013-2014														
NEWTOWN	Gr. 5	38	14	338	28	23	146	59	59	143	73			
2010-2011														
STATE	Gr. 8	39	29	242	25		158		55	144	143	118	38	24
2013-2014														
NEWTOWN	Gr. 8	32	12	420	12		158	71	71	158	158	71	12	12

2) Do you have data describing whether the changeover from independent bus operators has actually saved the town any money?

Yes and this information has been documented throughout our budget book (pgs. 250-258). In 2011-12 when the owner operators where in full effect, the cost of student transportation was $4,443,994. In addition to this cost, the BOE also incurred department expenses totaling $106,591 as well as insurance costs of $60,634. In 2012-13, when the new busing contract took affect the cost of transportation dropped by over 18% to $3,607,120. The department expenses and insurance dropped to zero resulting in a total savings of about 22% or $1,004,099. Going into our fourth year of the contract (fiscal 2015-16) the total transportation costs are ***still*** below the owner operators cost and are expected to result in a savings of $551,987. Over the five-year term of the contact, the BOE anticipates a total budget savings of more than $3.5 million dollars.

3) Describe/explain the Minimum Budget Requirement (MBR). Can you provide historical data to date and its impact on the BOE budget/taxpayer burden?

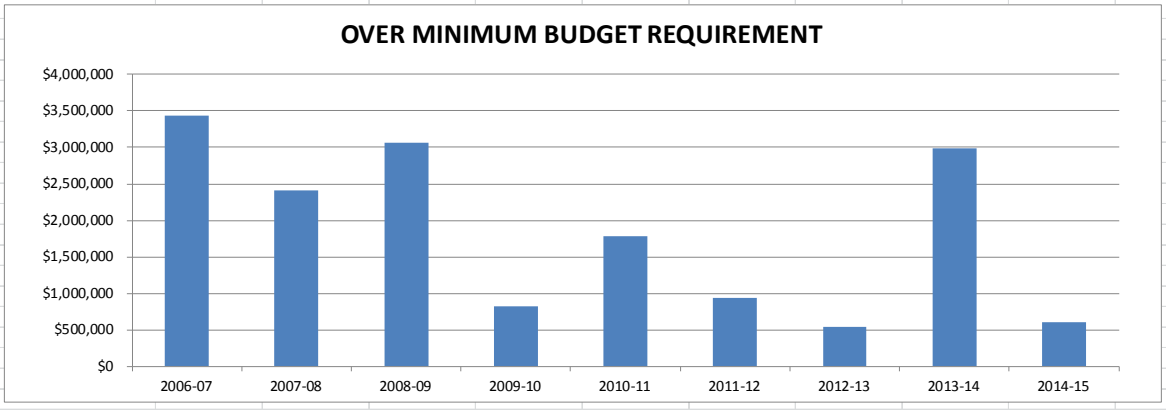
State law requires towns to spend 100% pf their ECS aid for educational purposes and to spend the funds only on the authority of the town's local or regional board of education. In addition, the towns are barred from using increases in ECS funding to supplant local education funding (CGS § 10-262i(c)).

In 2005, the General Assembly made the prohibition against supplanting local education funding more explicit and enacting a minimum budget requirement (MBR) (CGS § 10-262i(d)). The first MBR required any town that received an increase in ECS funding over the amount it received in the previous year to have a budgeted education appropriation that at least equaled its appropriation for the education in the previous year plus 100% of the ECS increase (PA 05-245). The effect of the current MBR is to prohibit towns from reducing education budgets. By law, the penalty for failing to meet the MBR is a reduction on the town's ECS grant for the subsequent fiscal year equal to twice the amount of the shortfall (CGS § 10-262i(f)). *See chart below*

MINIMUM BUDGET REQUIREMENTS

	2006-07	2007-08	2008-09	2009-10	2010-11 *	2011-12	2012-13	2013-14	2014-15
PRIOR YEAR'S BUDGET	$56,938,770	$60,387,154	$62,885,158	$66,031,044	$66,031,044	$67,194,734	$67,971,427	$68,355,794	$71,045,304
REQUIRED INCREASE/ALLOWED DECREASE	$10,648	$85,463	$77,612	($1,156,366)	($614,836)	($167,550)	($154,860)	($294,163)	($299,953)
MINIMUM BUDGET REQUIREMENT	$56,949,418	$60,472,617	$62,962,770	$64,874,678	$65,416,208	$67,027,184	$67,816,567	$68,061,631	$70,745,351
CURRENT YEAR'S BUDGET	$60,387,154	$62,885,158	$66,031,044	$65,700,092	$67,194,734	$67,971,427	$68,355,794	$71,045,304	$71,345,304
OVER MINIMUM BUDGET REQUIREMENT	$3,437,736	$2,412,541	$3,068,274	$825,414	$1,778,526	$944,243	$539,227	$2,983,673	$599,953

* 2010-11'S ALLOWABLE DECREASE IS BASED ON 2008-09 BUDGET RATHER THAN PRIOR YEAR'S



4) The Newtown HS student population has increased fewer than 60 students since 2005/6 (1688). However, from 2005/6 to 2010/11, an increase of approximately 15 HS teachers were added. Why has this increased total not been reduced since HS student population has never come close to projections?

Rationale:

In 2010 students earned a minimum of 20 credits to meet graduation requirements. Beginning with the class of 2011, an additional science and an elective credit was added to bring the minimum credit requirement to 22 for all students. Further, beginning with the class of 2016, students are required to complete a course in Financial Literacy, bringing the minimum credit requirements for all students to 22. For the class of 2018, students must earn a minimum credit requirement of 23, which includes 1 World Language. Students also continue to graduate with credits beyond the minimum expected in order to ensure they are competitive for college.

NHS had a need for new teachers in certain areas even prior to 2011. However, the school did not have the capacity/space to do so. The additional space supported our ability to hire new teachers in order to decrease class size to reasonable numbers and BOE guidelines.

2005-06:

School psychologist

Psychologist added to accommodate a larger population in order to meet the social/emotional/psychological needs of all students. In addition, the school psychologists conduct testing and run PPTs/504 meetings. These continue to require personnel resources as many are complex in nature in a school of this size. This position is part of pupil services.

2006-07:

Bio/Chem

The additional hires in science were made in response to student increased enrollment, to address class size and certification issues, and to accommodate the number of students who take additional credits in science to remain competitive for college. In addition, class size in science/lab courses must be lower than other classes due to safety and OSHA guidelines. *Currently, class averages in biology and chemistry are approximately 21 (and cannot exceed 24 due to safety issues).*

Further, science staff additions have enabled us to increase our elective offerings (APES, Applied Science Research, Health Science, Public Health) and offer enough AP sections so that few, if any, students are turned away.

Business Education

Business education teacher added to accommodate the needs of students who continued to need elective courses to complete overall elective requirements for graduation. These courses meet the needs of students not only interested in the field but who want to pursue business fields at the college level. *NOTE: In 2011/12, we increased credits to 23 for all students, which included a Financial Literacy course.*

(.4) Social Studies – (8/22/07 pos. increased to 1.0)

Added position due enrollment in addition about 85% of students take more than the required 3 years of social studies. Currently, in social studies, there are 26 sections of classes over 25 students.

2007-08:

Earth Science

Increasing enrollment and a desire to limit class size, particularly for college prep level classes.

Math

Math position added this year to meet the enrollment needs and to align with recommended class size. Currently, the math department has the highest class size numbers. While 3 credits are minimally required for graduation, 67% of our population takes 4 credits in math to remain competitive for college pursuits. Currently, average class size in math is 28 sections with classes over 25. There are also 11 sections with 28 students or above.

Culinary (.8)

.8 FTE added to accommodate the high interest in this area. One teacher could not handle the growing number of student requests to pursue culinary arts and advanced culinary courses. This a popular field and many students go onto culinary arts institutes and culinary schools as a result. In addition, there is a safety factor in these classes as students are part of an entrepreneurship, manage the snack shack and Outakes (in the cafetorium), as well as the variety of catering opportunities throughout the school.

2008-09:

Spanish

Position added to maintain class size guidelines and accommodate student requests in Spanish at this time. In addition, students often take more than 2 credits of World Language in order to remain competitive for college. Currently, and with the requirement of World Language, there are 13 sections with classes over 25.

(.4) FLEX Math -(8/28/09 pos. increased to .8)

This position in FLEX was increased to .8 in 2009. The position needed another staff member as FLEX supports struggling students throughout the year. Students are placed in the program for a variety of reasons: failures, return to school after medical leave, etc. The position was added specifically to accommodate students who struggle in math. The other staff member's expertise is in the humanities area.

2009-10:

Physics

The additional hires in science were made in response to student increases in a particular year, to address class size and certification issues, and to accommodate an increase of required science courses from 2 to 3. Currently, the average in physics classes is 18, which is lower than in other departments due to safety concerns.

Social Studies

Added position due enrollment in addition about 85% of students take more than the required 3 years of social studies. Currently, in social studies, there are 26 sections of classes over 25 students.

Mandarin Chinese

This instructor position is part of our NICE exchange with China. Part of the teacher's salary is paid through the Hanban organization so that NHS can offer students the language of Mandarin.

Special Education

The specialized needs of students at NHS have grown. Students with disabilities population and their complex needs have increased. New position added to ensure we could meet the IEP needs of our high school students and maintain reasonable caseloads of students. This included the addition of an in-house critical skills program for students with social/emotional needs.

School Counselor

In order to create a more meaningful freshman experience and effectively manage the transition from middle school to high school, we have created the position of Freshman Counselor with a web of support personnel and practices. The creation of this position allows the Freshman Counselor to more effectively coordinate the transition to the high school while it allows the six other counselors to more effectively manage their caseloads. However with the continuous increase in enrollment the freshman counselor caseload now exceed 400 students. According to NEASC recommendation the Counselor/Counselee Ratio for a counselor should not to exceed 300:1. NEASC Policy Handbook

In addition, all students are expected (through the State mandate) to complete a Student Success Plan as they move through their 4 years of high school. Counselors have direct oversight in working with students throughout this process (goal setting, interest inventory, college and career exploration)

2010-11

Biology

The additional hires in science were made in response to student increases in a particular year, to address class size and certification issues, and to accommodate number of students who take additional credits in science to remain competitive for college. Currently, class averages in biology and chemistry are approximately 21 (and cannot exceed 24 due to safety issues). Science additions have enabled us to increase our elective offerings (APES, Applied Science Research, Health Science, Public Health) and offer enough AP sections so that few, if any, students are turned away.

(.4) Latin – (8/21/14 pos. reduced to .2)

Latin teacher to accommodate the language needs of students, especially as Latin is a challenging course, often desired by students who want to improve their SAT scores. This course adds to the variety of world language opportunities afforded to NHS students to maintain their competitive edge with respect to college acceptance.

2011-12:

Integrated Earth Science

Increasing enrollment and a desire to limit class size, particularly for CPB classes.

Social Studies

Added position due to enrollment and number of high school students taking more than the required 3 years of social studies. Currently, in social studies, there are 26 sections of classes over 25 students.

2012-13:

No new positions added

2013-14:

No new positions added

2014-15:

(.5) Special Ed. Transition Program

A .5 special education teacher was added for this year's budget to meet the increasing needs for special education transition programming. With the increase in students who are identified for services, the need to address IDEA mandated transition services has increased.

Decreased:
We decreased at the high school in art by 1.20 and Tech Ed by .80 during this time frame.

5) Even with reductions possible by the BOF (Dental, Transportation, etc) there is still likely to be an increase in spending/budget despite an estimated decrease of almost 200 students. Can you explain (perhaps again) the relationship between enrollment, staffing and budget? Should the community at some point expect a reduction in budget given the predicted declines or do any potential saving get turned into new programing or merely offset contractual increases (or something else)?

The marker which is used as a placeholder for maintenance generally falls into the 2.5% to 3.0% range. Maintenance would be defined as what additional dollars would be needed to play forward existing program and student opportunity without any changes from one year to the next. In nearly all cases dollar increases are driven by contracts and insurance. Therefore, if you look to Newtown a 3% maintenance adjustment would have resulted in an approximate $2.1 million dollar increase in needed new spending. The proposed operational plan being reviewed by the Legislative Council arrives with endorsement from the Board of Finance with a requested $242,642 for new spending. The delta between the $2.1 and the actual proposed was realized in part with a reduction in force from our declining enrollment. In addition, no new spending for insurance and an early incentive retirement plan were all drivers to the good for the bottom line.

6) The budget details staffing reductions of 13.17 FTE ($331,389).

- How much of the 13.17 is directly attributable to a decrease in the student population?

  All of the certified staff reductions (with the exception of staff members who work with special needs youngsters) are directly connected to declining enrollment. Therefore 7.3 certified positions are directly connected to enrollment.

- Focusing on Reed as an example: There is a -.50 in Art; -.50 in Music; and -1.0 in PE.
  - Can you explain the mechanics of how a -.50 FTE reduction in Art (for example) has no impact on student services?

Program design does not change. Program contact time with students remains in place. The above mentioned reductions are feasible because there are fewer classes to teach. Example – RIS opened their doors with 40 classroom teachers. A dozen years later we will have 30 classroom teachers for the 2015-2016 school -year. In addition, the final staffing changes may include additional schools as the reductions were earmarked at RIS as placeholders until final class sections are realized.

  - And what specifically will it mean when implementing that from a staff perspective, in terms of their time and compensation?

No change

- Within the 13.17 are -8.20 FTE Spec Ed Para-Educators. Can you explain the rationale for no longer needing these positions?

Restructuring special education supports Pk-8 and expanding the use of various co-teaching models across the district is projected to reduce the need for para supports. However, it is important to note that the need for resources may fluctuate at any time due to various factors such as the possibility of new students entering the district or if additional students become eligible for special education supports.

7) Heating Oil Purchases

- There is the possibility of real budget savings without impacting services if the BOE is able to purchase heating oil at the rate the town secured. Can you provide us with the cost for not purchasing oil from the contract negotiated by the BOE? That is, can you buy out of the already negotiated contract with the oil company? It may also be possible to reduce the amount of oil purchased under the BOE contract and buy some at the higher rate and some at the town's lower rate (if this leads to a reduced fee or no fee for not buying the full amount). In short—what are our options and costs related to buying oil (all or some) at the lower rate negotiated by the town.

The oil contract is a fixed quantity contract with no variability in cost or quantity. Our experience with the Town last year when they didn't use all the contracted gallons was that we either had to take the gallons (with no place to put it) or to liquidate it at $1.0754 per gallon. Essentially, this amount per gallon was paid for to get out of the remaining contact obligation.

We have contacted East River and the current option we are exploring would be to e to extend our contract an additional year (through 2017-18) and then cost average it down for the 2015-16 year. In other words, the cost of 2015-16 would have the effect of bringing the $2.99 down.

- Also, what process can be put in place where we can prevent the BOE from paying higher rates than the town (and vice versa)? Would both side benefit by a lower rates associated with a higher volume purchase for instance?

In September 2015, crude oil was at its lowest price in over 26-months. At that time, the BOE began to explore the possibility of locking into a rate that was lower than the current rate of $3.09 per gallon. The BOE conferred with Town officials about moving forward together at the rate of $2.99 as there was no short-term forecast indicating that the market would drop any further. Mr. Hurley declined stating that he would wait until February and bid with CROG. With the anticipation of potentially higher energy costs *(remember, this was a 26 month low)* and with the heating season quickly approaching, the BOE decided to lock into a contract at $2.99. History has previously demonstrated that the price of oil has never declined going into a heating season. This has been an unprecedented and certainly an unpredictable drop in the price of oil. (see the attached information that the Board relied upon before committing to a contract)

Could Low Oil Prices Point To A Debt Bubble Collapse?

By Gail Tverberg | Mon, 22 September 2014 21:38 | 3 +1 4 Tweet 17 Like

Oil and other commodity prices have recently been dropping. Is this good news, or bad?

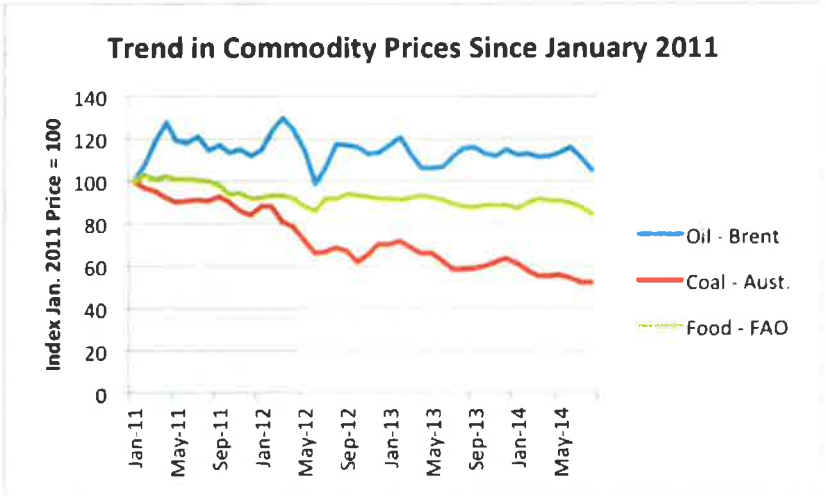


Figure 1. Trend in Commodity Prices since January 2011. Brent spot oil price from EIA; Australian Coal from World Bank Prink Sheet; Food from UN's FAO.

I would argue that *falling commodity prices are bad news*. It likely means that the debt bubble which has been holding up the world economy for a very long–since World War II, at least–is failing to expand sufficiently. If the debt bubble collapses, we will be in huge difficulty.

Many people have the impression that falling oil prices mean that the cost of production is falling, and thus that the feared "peak oil" is far in the distance. This is not the correct interpretation, especially when many types of commodities are decreasing in price at the same time. *When prices are set in a world market, the big issue is affordability*. Even if food, oil and coal are close to necessities, consumers can't pay more than they can afford.

A person can tell from Figure 1 that since the first part of 2011, the prices of Brent oil, Australian coal, and food have been trending downward. This drop in prices continues into September. For example, as I write this, Brent oil price is $97.70, while the average price for the latest month shown (August) is $105.27. It is this steeper, recent drop, which many are concerned about.

Related: All Eyes On Kenya: The Next Big Oil Exporter

We are dealing with several confusing issues. Let me try to explain some of them.

Commodity Prices

	PRICE	CHG	CHG%
Crude Oil	93.91	+0.37	+0.40%
Ethanol	1.565	+0.012	+0.77%
Natural Gas	4.087	+0.058	+1.44%
Gasoline	2.5157	+0.0276	+1.11%
Heating Oil	2.7095	+0.0071	+0.26%
Gold	1218.4	+3.0	+0.25%

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Issue #1: Over the short term, commodity prices don't reflect the cost of extraction; they reflect what buyers can afford.

Oil prices are set on a worldwide basis. The cost of extraction varies around the world. So it is clear that oil prices will not match the cost of extraction, or the cost of extraction plus a reasonable profit, for any particular producer.

If oil prices drop, there is a temptation to believe that this is because the cost of production has dropped. Over a long enough period, a drop in the cost of production might be expected to lead to lower oil prices. *But we know that many oil producers are finding current oil prices too low.* For example, the Wall Street Journal recently reported, "Royal Dutch Shell CEO: Can't deny returns are too low. Ben van Beurden prepared to shrink company in order to boost returns, profitability." I wrote about this issue in my post, Beginning of the End? Oil Companies Cut Back on Spending.

In the short term, *low prices are likely to signal that less of the commodity can be sold on the world market.* Commodities such as oil and food are very desirable products. Why would less be needed? The issue, unfortunately, is affordability. Affordability depends largely on (1) wages and (2) debt. Wages tend to be fairly stable. The likely culprit, if affordability is leading to lower demand for desirable products like oil and food, is *less growth in debt.*

Issue #2: Economic growth tends to produce a debt bubble.

Many economists believe that technological innovation is the key to economic growth. In my view, economies need a combination of the following to have economic growth of the type experienced in the last 100 years:1

(Increase in debt) + (cheap-to-extract fossil fuels) + (cheap-to-use non-fossil fuel resources) + (technological innovation)

In such a case, debt keeps increasing as an economy grows. Unfortunately, *this economic growth is only temporary, because resources tend to become more expensive to use over time, making the "cheap" resources required for economic growth disappear.*

The problem underlying the rising cost of resources (both for fossil fuels and others) is that we tend to use the cheapest-to-extract resources first. Technological innovation continues to occur, but as diminishing returns hit both fossil fuels and other resources, there are larger and larger demands on technology to keep costs in line with what workers can afford. Eventually, the cost of resources (net of technological improvements) rises too much, and economic growth is cut off. By this time, a huge mountain of debt has been built up.

Let me explain further how this happens. Without fossil fuels, the world is pretty much stuck with the goods that can be made with wood, or from other basic resources such as animal skins, cotton, flax, or clay. A small quantity of metal and glass goods can be made, but deforestation quickly becomes a problem if an attempt is made to "scale up" the quantity of goods that require heat in their production.2

Once inexpensive coal became available, its availability opened the door to technological innovation, because it provided heat in quantity that had not been available previously. While ideas such as the steam engine had been around for a long time, the availability of inexpensive coal made the production of metals needed for the steam engine, plus train tracks and railroad cars, available at reasonable cost.

With the ability to make steel and concrete in quantity (both requiring heat) came the ability to make hydroelectric dams and electrical transmission lines, thus enabling electricity for public consumption. Oil, as a liquid fuel, paved the way for widespread use of additional innovations, such as private passenger automobiles, mechanized farm equipment, and airplanes. Between coal and oil, many workers could leave farming and begin jobs in other sectors of the economy.

The transformation that took place was huge: from wooden tools and human or animal labor to a modern industrial society. How could such a big change take place? Before the change, the ability to generate a profit that might be used for future capital investment was very limited.

Also, the would-be purchasers of products made in an industrial economy were very poor. I would argue that the only way of bridging this gap was debt. See my earlier posts, Why Malthus Got His Forecast Wrong and The United States' 65-Year Debt Bubble.

The use of debt has several advantages:

1. It allows the consumer to buy the end product made with the new resources, assuming the end product isn't too expensive relative to the consumer's earnings.

2. It gives resource-extracting businesses the money they need to buy equipment and to hire workers, prior to the time they have earned profits from resource extraction.

3. It gives the companies the ability to build factories, before they have accumulated profits to pay for the factories.

4. It allows governments to fund needed infrastructure, such as roads and bridges, before having the tax revenue available to pay for such infrastructure.

5. *Most importantly, the "demand" generated by (1), (2), (3) and (4) raises the price of resources sufficiently that it makes it profitable for companies in the business to extract those resources.*

Because of these issues, debt and cheap fossil fuels have a symbiotic relationship.

(1) The combination of debt, inexpensive fossil fuels, and inexpensive resources of other kinds allows the production of affordable goods that raise the standard of living of those using them. The result is what we think of as "economic growth."

(2) The economic growth provides the additional income needed to pay back the debt with interest. The way this happens is indirectly, through what is sometimes described as "greater productivity of workers." This greater productivity is really human productivity enhanced with devices made possible by fossil fuels, such as sewing machines, electric milking machines, and computers that allow workers to become more productive. Indirectly, the higher productivity of workers benefits both businesses and governments, through higher sales of goods to consumers and through higher taxes. In this way, businesses and governments can also repay debt with interest.

Higher-priced resources are a problem. Higher-priced resources of any kind tend to "gum up the works" of this payback cycle. Higher-priced oil in particular is a problem. In the United States, when oil prices rise above about $40 or $50 barrel, growth in wages stops.

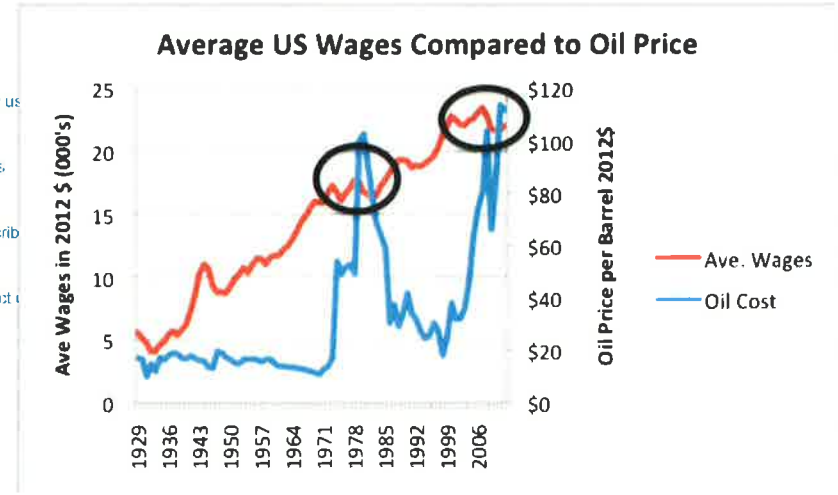


Figure 2. Average wages in 2012$ compared to Brent oil price, also in 2012$. Average wages are total wages based on BEA data adjusted by the CPI-Urban, divided total population. Thus, they reflect changes in the proportion of population employed as well as wage levels.

With higher oil prices, the rise in the standard of living stops for most workers, and good-paying jobs become difficult to find. There are a couple of reasons we would expect wages to stagnate with higher oil prices:

(1) Competition with cheaper energy sources. When oil prices rose, countries using a very high percentage of oil in their energy mix (such as the PIIGS in Europe, Japan, and United States) became less competitive in the world economy. They tended to fall behind China and India, countries that use much more coal (which is cheaper) in their energy mix.

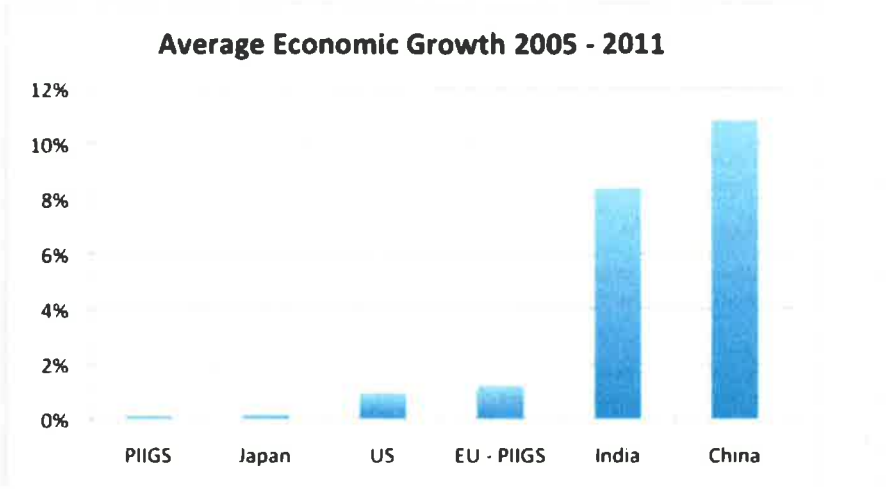


Figure 3. Average percent growth in real GDP between 2005 and 2011, based on USDA GDP data in 2005 US$.

(2) Need to keep the price of goods flat. Businesses need to keep the total price of their products close to "flat" despite rising oil prices, if they are to continue to sell as much of their product after the oil price increase as previously. Oil is one major cost of production; wages are another. An obvious way to offset rising oil prices is to reduce wages. This can be done in several ways: outsourcing work to a lower cost country, greater automation, or caps on wages. Any of these approaches will tend to produce the flattening in wages observed in Figure 2.

Based on Figure 2, an oil price above $40 or $50 per barrel seems to put a cap on wages, and indirectly leads to much less economic growth. Even if we didn't hit this oil price limit–for example, if we had discovered a liquid fuel that could be produced in quantity for less than $40 barrel–we would eventually hit some kind of growth limit. For example, the limit might be climate change or too much population for food production capability. Even too much debt can be a limit, if citizens' incomes don't rise in a corresponding manner. At some point, it becomes impossible even to make interest payments if the debt level is too high. Indirectly, citizens wages even support business and government debt, because business revenues and tax revenues depend indirectly on wages.

Issue #3: Repaying debt is very difficult in a flat or declining economy.

Once growth stops (or slows down too much), the debt bubble tends to crash, because it is much more difficult to repay debt with interest in a shrinking economy than in a growing one.

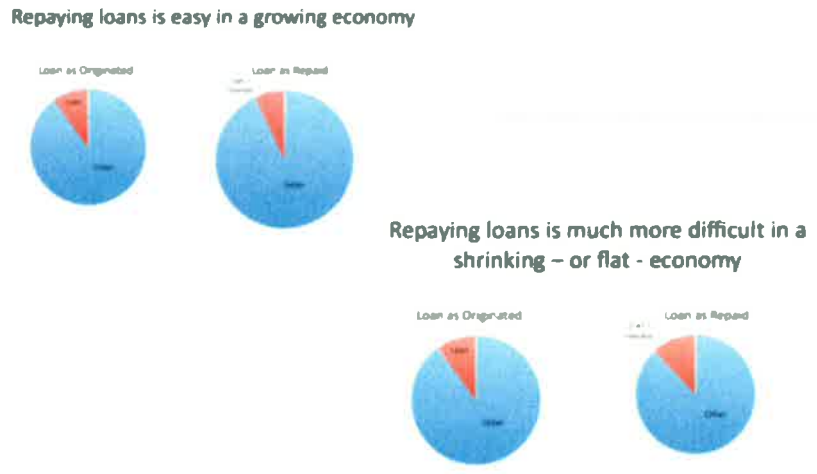


Figure 4. Repaying loans is easy in a growing economy, but much more difficult in a shrinking economy.

The government can hide this issue for a very long time by rolling over old debt with new debt and by reducing interest rates to practically zero. At some point, however, the system seems certain to fail.

Not all debt is equivalent. Debt that simply blows bubbles in stock market prices has little impact on commodity prices. In order to keep commodity prices high enough for producers to want to continue to produce them, the debt really has to get back into the hands of the potential buyers of the commodities.

Also, any changes that tend to reduce world trade push the world economy toward contraction, and make it harder to repay debt with interest. Thus, sanctions against Russia, and Russia's sanctions against the US and Europe, tend to push the world toward debt collapse more quickly.

Issue #4: Rising oil and other commodity prices are a problem, especially for countries that are importers of those commodities.

Most of us are already aware of this issue. If oil prices rise, or if food prices rise, our salaries do not rise by a corresponding amount. We end up cutting back on discretionary purchases. This cutback in discretionary purchases leads to layoffs in these sectors. We end up with the scenario we had in the 2007-2009 recession: falling home prices (since higher-priced homes are discretionary purchases), failing banks, and many without jobs. See my article Oil Supply Limits and the Continuing Financial Crisis.

The reason that low oil and other commodity prices are welcomed by many people now is because the opposite–high oil and other commodity prices–are so terrible.

Issue #5: Falling oil and other commodity prices are a problem, if the cost of production is not dropping correspondingly.

If commodity prices drop for any reason–even if it is because a debt bubble is popping–it is going to affect how much companies are willing to produce. There is going to be a tendency to cut back in new production. If prices drop too far, it is even possible that some companies will leave the market altogether.

Even if it doesn't look like a country "needs" the current high oil price, there may still be a problem. Oil exporters depend on the high taxes that they are able to obtain when oil prices are high. If they cannot collect these taxes, they may need to cut back on programs such as food subsidies and new desalination plants. Without these programs, civil disorder may lead to cutbacks in oil production.

Issue #6: The growth in oil sales to China and to other emerging markets has been fueled by debt growth. This debt growth now seems to be stalling.

Growth in oil consumption has mostly been outside of the United States, the European Union, and Japan, in the recent past. China and other emerging market countries kept demand for oil high.

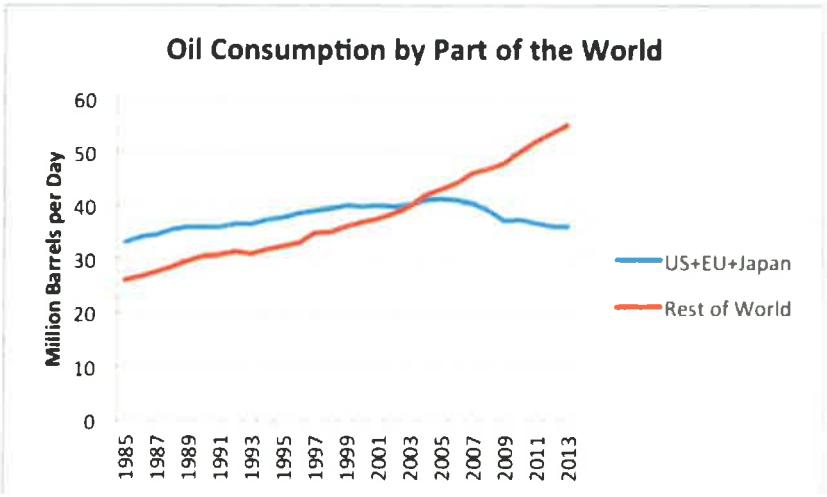


Figure 5. Oil consumption by part of the world updated through 2013, based on BP Statistical Review of World Energy 2014 data.

Ambrose Evans-Pritchard reports, China's terrifying debt ratios poised to breeze past US levels. He shows the following chart of China's growth in debt from all sources, including shadow banking:

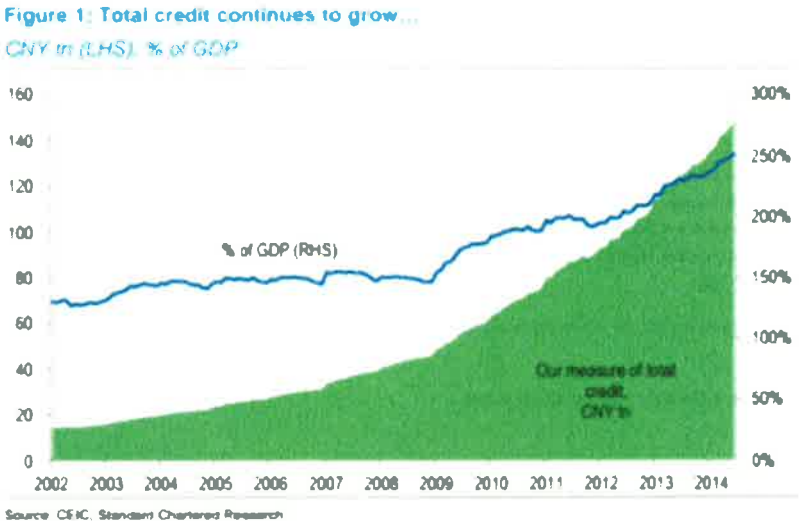


Figure 6. China's total debt, based on chart displayed in Ambrose Evans-Pritchard article.

This rise in debt now seems to be slowing, based on a Wall Street Journal report. A person wonders whether this stalling debt growth is affecting world oil and other commodity prices.

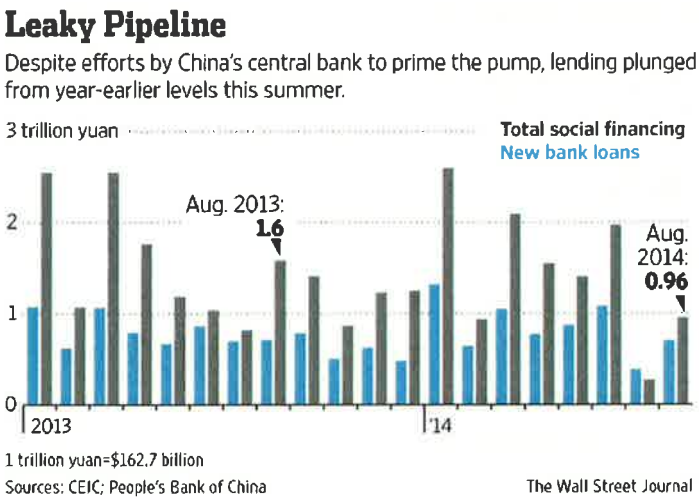


Figure 7. Figure from WSJ article PBOC Struggles as Chinese Borrowers Hold Back.

Other emerging markets also seem to be experiencing cutbacks. Since 2008, the United States, Europe, and Japan have had very easy money policies. Some of the money available at low interest rates was invested in emerging markets. Now the WSJ reports, Fed Dims Emerging Markets' Allure. According to the article investors, investors are taking a more cautious stance on new investment because of fear of rising US interest rates.

Of course, other issues affect debt and world commodity demand as well. If interest rates rise, they many have a tendency to shrink new lending, in general, because loans become less affordable. Sanctions of one country against another, such as the US against Russia, and vice versa, also tend to reduce demand.

Issue #7: Debt bubbles have been a problem in past collapses.

According to Jesse Colombo, the Depression was to a significant result the result of debt bubbles that built up during the roaring twenties. Another, longer-term cause would seem to be the loss of farm jobs that occurred when coal allowed tasks that were previously done by farm workers to be done by either electricity or by horses pulling metal plows. The combination of a debt bubble and loss of jobs seems to have parallels to our current situation.

Many believe the subprime housing bubble crash contributed to the Great Recession. The oil price spike of 2007 and 2008 played a major role as well.

Issue #8: If we are facing the collapse of a debt bubble, it is quite possible that prices of many commodities will fall. This could possibly lead to a collapse in the supply of many types of energy products, more or less simultaneously.

Figure 8, shown below, is a very rough estimate of the kind of decline in energy use we could be facing if a debt collapse leads to very low prices of many types of fuels simultaneously. Prices of many commodities crashed in 2008, and it was only with massive intervention that prices were propped up to 2011 levels. After the beginning of 2011, prices began sinking again, as shown in Figure 1.

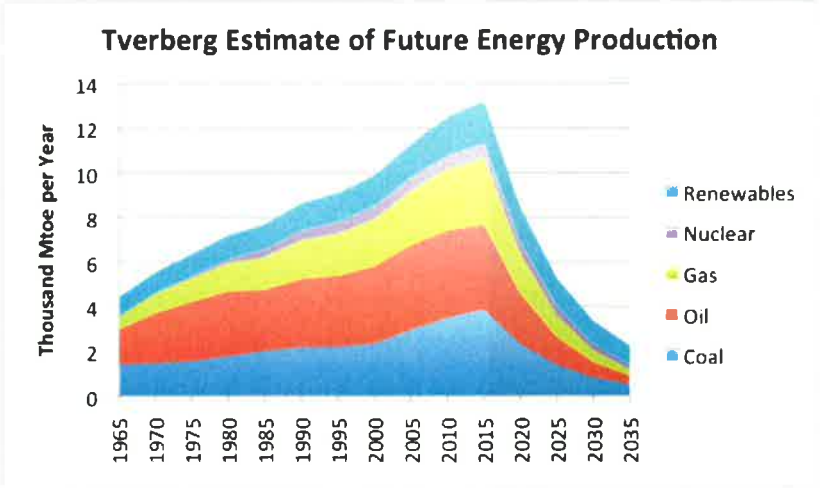
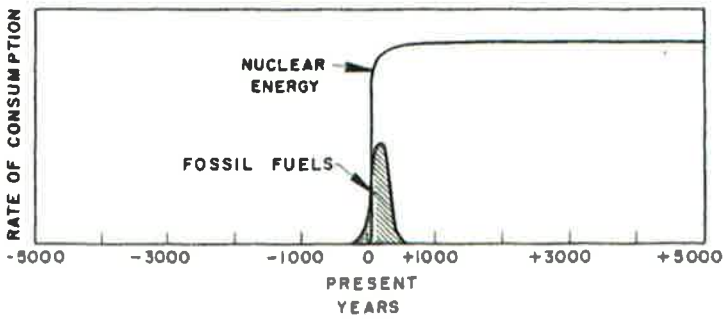


Figure 8. Estimate of future energy production by author. Historical data based on BP adjusted to IEA groupings.

Clearly governments will try to prevent another sharp crash in commodity prices. The question is whether they will be successful in propping up commodity prices, and for how long they will be successful. In a finite world, fossil fuel energy production eventually must decline, but we don't know over precisely what timeframe.

Issue #9: My steep decline contrasts with the "best case" forecast of future oil consumption given by M. King Hubbert.

M. King Hubbert wrote about a scenario where another type of fuel completely takes over, before oil and other fossil fuels are phased out. He even discusses the possibility of making liquid fuels using very cheap nuclear energy. The way he represents the situation is the following:



jure 30 - Relative magnitudes of possible fossil-fuel and nuclear-ergy consumption seen in time perspective of minus to plus 5000 years.

Figure 9. Figure from Hubbert's 1956 paper, Nuclear Energy and the Fossil Fuels.

In such a scenario, it is possible that oil supply will begin to decline when approximately 50% of resources are exhausted, and the down slope of the curve will follow a symmetric "Hubbert curve." This situation seems to represent a best possible case; it doesn't seem to represent the case we are facing today. If a debt collapse occurs, much of the remaining fuel is likely to stay in the ground.

Related: Low Demand, Increased Supply Conspire To Push Crude Prices Lower

Issue #10: Our economy is a networked system. Increasing debt is what keeps the economy inflated. If wages fail to keep pace with debt growth, the system seems likely to eventually crash.

In previous posts, I have represented the economy as a self-organized networked system, consisting of businesses, consumers, governments (with laws, regulations, and taxes), financial system, and international trade.

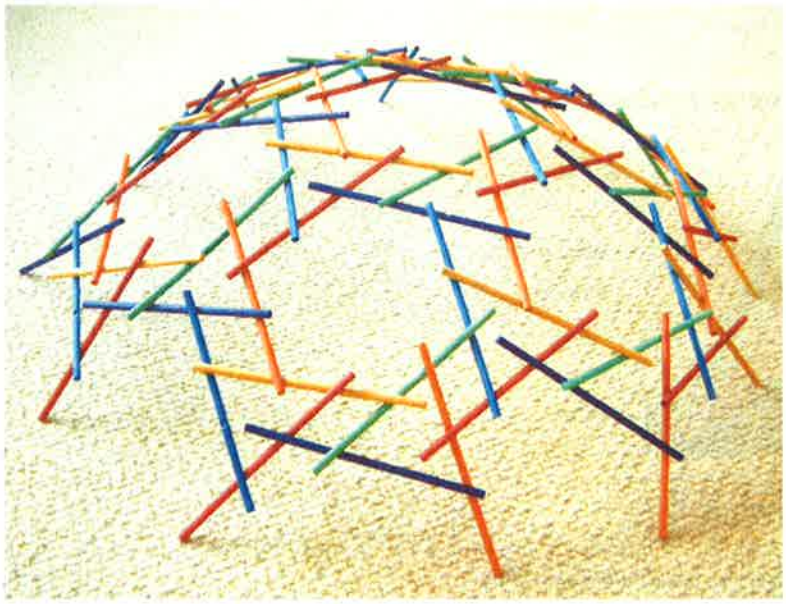


Figure 10. Dome constructed using Leonardo Sticks

One reason the economy is represented as hollow is because the economy loses its capability to make goods that are no longer needed–such as buggy whips and rotary dial phones. Another reason why it might be represented as hollow is because debt is used to "puff it up" to its current size. Once the amount of debt starts shrinking, it makes it very difficult for the economy to maintain its stability.

Many "peak oilers" believe that if we have a problem with the financial system, all we have to do is start over with a new one–perhaps without debt. Everything I can see says that debt is an essential part of the current system. We could not extract fossil fuels in any significant quantity, without an ever-rising quantity of debt. The problem we are encountering now is that once resource costs get too high, the debt-based system no longer works. A new debt-based financial system likely won't work any better than the old one.

If we try to build a new system without fossil fuels, we will be really starting over, because even today's "renewables" are part of the fossil fuel system.3 We will have to go back to things that can be made directly from wood and other natural products without large amounts of heat, to have truly renewable resources.

Notes:

[1] This is really a simplification of the real issues. As world population grows, it is necessary to obtain an increasing amount of food from the same arable land. Thus, it is necessary to find new processes to increase food production, at the same time that soil is quite possibly degrading. Soil is in a sense a "resource other than fossil fuels," but I have not mentioned this issue specifically.

Growing pollution problems are in some sense an indirect cost of extracting fossil fuels and other resources. These represent another growing cost that I have not specifically identified. Furthermore, there are indirect expenses that do not fit neatly into any category, such as required desalination plants to handle growing populations in areas where water is scarce. We may need to consider mitigation expenses of all types as part of the "cost of resource extraction."

My point is that it becomes increasingly difficult to offset these many cost increases with technological innovations. Furthermore, if no changes are made, a larger and larger share of both the workforce and resources are required for maintaining the status quo, leaving fewer workers and a smaller quantity of resources to "grow" the economy.

[2] Wind and water are additional sources of energy, but they are sources of mechanical energy, not heat energy, so are not helpful unless they can be converted first to electricity, and then to heat. In quantity, they never were very large in pre-fossil fuel days.

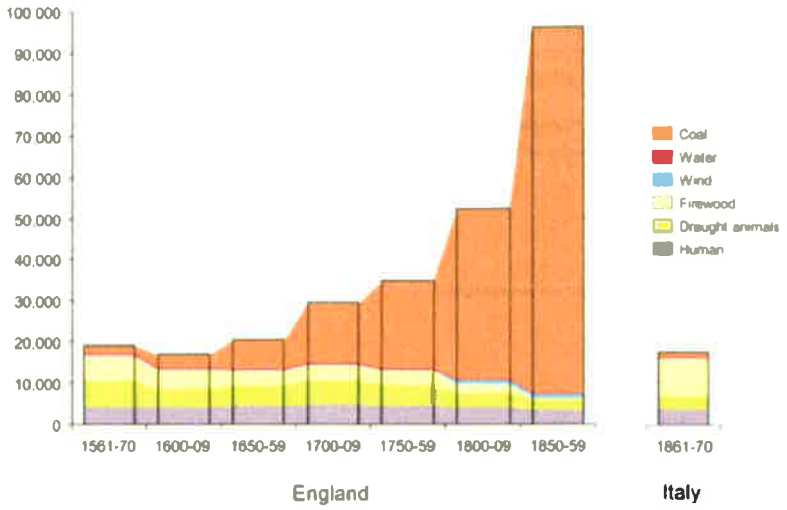


Figure 11. Annual energy consumption per head (megajoules) in England and Wales 1561-70 to 1850-9 and in Italy 1861-70. Figure by Tony Wrigley from Opening Pandora's Box. Figure originally from Energy and the English Industrial Revolution, also by Tony Wrigley.

[3] Of course, any existing "renewable" will continue to work until it needs repairs that are unavailable. Other parts of the system (such as electric transmission lines, batteries, inverters, and attached devices such as pumps) may fail more quickly than the renewables themselves.

By Gail Tverberg

(Source: www.Ourfiniteworld.com)

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Leave a comment

d. reischer on September 23 2014 said:

So, your conclusion is that we are hosed ?

Anne on September 23 2014 said:

To be fair, we were always hosed long before this my friend. Interesting to see the debt angle brought up. Several people seem to discount the current CAPEX pressures. This current Fracking boom is sustained largely with debt (much of which could be called junk bonds). If oil drops too low then there is no incentive to do Fracking as it already has a rather high price of extraction to begin with. You need high oil prices to break even.

I happened upon the new consumer report released by the Federal Reserve this month. The Reserve now admits there has been no recovery for the average consumer. It stands to reason this recovery we've seen in other sectors will be shown for what it is eventually-A fairy tale.

Paul Bertan on September 24 2014 said:

It is said that the sun give us all the world wide energy we need for a year in 70 minutes and we are increasing our ability to absorb it by 7% each year.

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Bloomberg

Oil Rises as OPEC Sec-General Says Group May Cut Target

By Mark Shenk - Sep 16, 2014

West Texas Intermediate climbed to a two-week high and Brent gained after OPEC's secretary general said the group may cut output targets next year.

Abdalla El-Badri said today that the Organization of Petroleum Exporting Countries' production quota could fall 500,000 barrels a day to 29.5 million barrels a day next year. El-Badri was speaking at OPEC's secretariat in Vienna after talks with Russian Energy Minister Alexander Novak. WTI has tumbled 13 percent since touching $107.73 a barrel on June 20 as Asian and European economies have showed signs of slowing while crude output gained.

"After the significant decline in prices, investors were looking for a reason to get into the market and El-Badri's comments gave them that," Michael Lynch, president of Strategic Energy & Economic Research in Winchester, Massachusetts, said by phone. "El-Badri said this was an outlook, not a decision, but the market is still taking it as a positive sign."

WTI for October delivery rose $1.96, or 2.1 percent, to $94.88 a barrel on the New York Mercantile Exchange. It was the highest settlement since Sept. 3. The volume of all futures traded was 27 percent above the 100-day average at 2:48 p.m. Prices have decreased 3.6 percent this year.

Brent for November settlement increased $1.17, or 1.2 percent, to end the session at $99.05 a barrel on the London-based ICE Futures Europe exchange. Volumes were 11 percent lower than the 100-day average. The North Sea oil traded at a $5.24 premium to the November WTI contract.

'Look Better'

"I am not really concerned about the prices declining at this short term," OPEC's El-Badri said. "I think the price will rebound by the end of the year. When we're coming to the fall, things will look better."

Saudi Arabia cut its crude production by 408,000 barrels a day to 9.6 million in August, the biggest reduction since the end of 2012, the kingdom said in a submission to OPEC.

OPEC officials, including Saudi Arabian Oil Minister Ali Al-Naimi, have said they see no urgent need to respond to oil's drop. Prices "always fluctuate and this is normal," Al-Naimi told reporters in Kuwait on Sept. 11. Oil will recover as demand for winter fuels climbs, Kuwaiti Oil Minister Ali Al-Omair said the same day. The group is next due to meet on Nov. 27.

'Huge Decline'

"The huge decline in prices since June has been a major concern to all oil producers," John Kilduff, a partner at Again Capital LLC, a New York-based hedge fund that focuses on energy, said by phone. "The Saudis have already started to cut output and now we're getting evidence of further action. The market appears to have found a bottom and the statements are a sign for the buyers to return."

Russian and OPEC analysts will meet in the spring, Russian Energy Ministry spokeswoman Olga Golant said by text message. "High-level" talks are scheduled for the second half of 2015, according to a joint statement from OPEC and Russia today.

"I wouldn't be surprised if the Russians and OPEC cooperated to support the market," Bill O'Grady, chief market strategist at Confluence Investment Management in St. Louis, which oversees $2.6 billion, said by phone. "It's in the interests of both parties to keep prices from falling further."

Nigeria Strike

Workers at Nigerian National Petroleum Corp., the country's state-owned oil company, began an indefinite strike that may disrupt crude output from Africa's top producer, Babatunde Oke, a Lagos-based spokesman for both a managers' union and a blue-collar workers' union, said by phone today. The country produced 2.3 million barrels a day in August, the most since 2006, according to data compiled by Bloomberg.

U.S. aircraft bombed Islamic State fighters near Baghdad in the latest expansion of an air campaign that began last month, Central Command said in a statement. The strike follows President Barack Obama's vow in a Sept. 10 speech to "degrade and ultimately destroy" the organization that has seized large swaths of northern Iraq and parts of neighboring Syria.

Crude futures surged when the militants captured the northern Iraqi city of Mosul.

Federal Reserve policy makers are meeting today and tomorrow. Fed Chair Janet Yellen is set to increase interest rates gradually between 2015 and 2017, according to a Bloomberg survey of

economists. The Fed has been saying since March that interest rates would stay low for a "considerable time" after it completes the asset purchases known as quantitative easing.

U.S. Stockpiles

An Energy Information Administration report tomorrow will probably show that U.S. crude inventories decreased 1.5 million barrels last week, according to the median of nine estimates in a Bloomberg survey.

Gasoline supplies fell 125,000 barrels during the week ended Sept. 12, according to the median estimate. Stockpiles of distillate fuel, a category that includes diesel and heating oil, probably increased 750,000 barrels.

October gasoline futures rose 2.8 cents, or 1.1 percent, to close at $2.5588 a gallon on the Nymex. Ultra low sulfur diesel for October delivery climbed 1.67 cents, or 0.6 percent, to $2.7563 a gallon.

Gasoline pump prices fell 0.9 cent to $3.381 a gallon nationwide yesterday, the least since Feb. 18, according to AAA, the largest U.S. motoring group.

To contact the reporter on this story: Mark Shenk in New York at mshenk1@bloomberg.net

To contact the editors responsible for this story: David Marino at dmarino4@bloomberg.net
Stephen Cunningham, Charlotte Porter

ENERGY

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Brent hits 26-month low under $97 on weak China data

1 Hour Ago

Getty Images

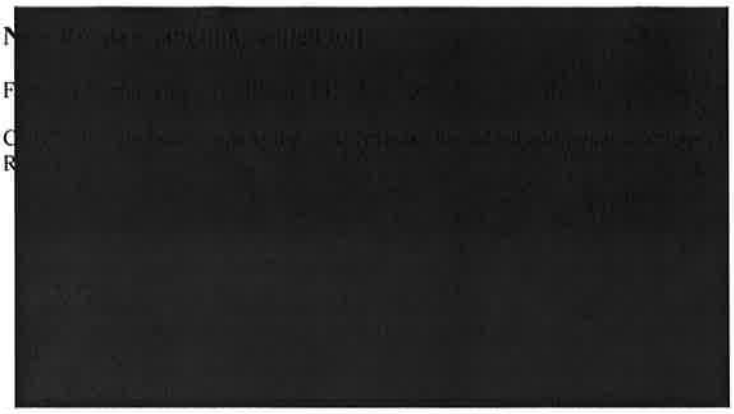
Brent crude slumped to a more than two-year low under $97 per barrel on Monday as a slew of lackluster economic data from China, the world's top energy consumer, cast a shadow on the outlook for oil demand amid abundant global supplies.

Analysts have warned of a potential hard landing at the world's No.2 economy after the country's factory output grew at its slowest pace in nearly six years last month, stoking fears of lower oil demand growth in the key consumer.

Read More › Gas relief: Falling fuel gives retail sales a boost, keep import costs tame

October Brent, which expires on Monday, fell to as low as $96.21 a barrel, the lowest since July 2, 2012. The contract recovered to trade just under $97, down 30 cents. November Brent was down around 50 cents above $97.

U.S. crude was flat near $92 a barrel, down $1, after slipping earlier to $90.63 - near a 16-month low of $90.43 hit last week.



"Obviously economic growth in China is one of the key drivers of world growth and generally of oil demand," Ric Spooner, chief market analyst of CMC Markets in Sydney said.

"As it currently stands, it seems likely that the (oil) demand growth won't keep up with the growth in supply capacity."

The Chinese data, which includes a drop in power generation for the first time in four years, came on the heels of downward revisions in 2014-2015 global oil demand growth by the International Energy Agency last week.

On the supply front, Libya's oil production is expected to rise to 1 million barrels a day in October.

Gulf delegates attending a meeting of oil ministers from the region said the price drop was unlikely to spur action from the Organization of the Petroleum Exporting Countries (OPEC) unless crude fell below $85 a barrel.

Ample supplies and weak demand have hit oil prices in recent weeks, but investors continue to keep an eye on geopolitical tensions for indications of any new threat to supply.

--By Reuters

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SBNF	145.63	▼	-1.55	-1.05%
ROSN1	232.19	▼	-1.01	-0.43%

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UPDATE 6-Oil hits 26-month low under $97 on weak China data

Mon Sep 15, 2014 1:32pm GMT

Print | Single Page

* China factory output growth slows to near six-year low

* Libya oil production set to reach 1 million bpd in October

* Investors eye stronger dollar ahead of Fed meeting

* U.S. and EU impose fresh sanctions on Russia over Ukraine (Updates prices; paragraphs 3-4)

By Christopher Johnson

LONDON, Sept 15 (Reuters) - Brent crude oil fell below $97 per barrel on Monday to its lowest in more than two years as lacklustre economic data from China, the world's top energy consumer, cast a shadow over the outlook for oil demand at a time of abundant supply.

China's factory output grew at the weakest pace in nearly six years in August, while growth in other key sectors also cooled, raising fears the world's second-largest economy may be at risk of a sharp slowdown.

October Brent, due to expire on Monday, fell as low as $96.21 a barrel, its weakest since July 2, 2012. The futures contract recovered to around $96.70 by 1325 GMT, down 41 cents.

U.S. crude was down 40 cents at $91.87, after touching $90.63 - near a 16-month low of $90.43 hit last week.

"Struggling global economic growth has resulted in falling growth in global oil demand," PVM oil analyst Tamas Varga said, adding that concerns over conflict in the Middle East, North Africa and Russia had not translated into supply disruptions.

Chinese data, which showed a drop in power generation for the first time in four years, came on the heels of downward revisions in 2014 and 2015 global oil demand growth estimates by the International Energy Agency last week.

On the supply front, Libya's oil production is expected to rise to 1 million barrels per day (bpd) in October. Libya was supplying almost nothing to world oil markets four months ago.

Oil ministers from the Middle East Gulf said last week the oil price drop was unlikely to spur action by the Organization of the Petroleum Exporting Countries (OPEC) unless crude fell below $85 a barrel.

A rally in the U.S. dollar against major currencies has also helped weaken oil. Investors will be closely watching the meeting of the Federal Open Market Committee later this week for clues on when the United States will raise interest rates.

A stronger U.S. currency makes dollar-denominated oil more expensive for holders of other currencies.

Investors continue to keep an eye on geopolitical tensions for indications of any new threat to supply.

The United States and European Union imposed fresh sanctions on Moscow last week, hampering exploration of Russia's huge Arctic and shale oil reserves and setting rules on tougher financing of existing Russian projects. (Additional reporting by Jane Xie in Singapore; Editing by Michael Urquhart)

Monday, September 15th
BINARY TRIBUNE

Crude oil trading outlook: WTI and Brent futures extend slide after China data

September 15, 2014 7:11 am

WTI and Brent futures were deep in the red during early trade in Europe today, as investors priced in disappointing data from China. Prices were pressured by a number of bearish reports on global supply and demand disbalances last week, while geopolitical tensions failed to offer meaningful support.

WTI futures for October delivery on the New York Mercantile Exchange traded at $91.14 per barrel at 7:06 GMT today, down 1.22% for the day, while prices had ranged from $90.63 to $92.37 per barrel. The US benchmark lost ~1% last week.

Meanwhile on the ICE in London, November Brent stood at $97.10 per barrel, down 0.88%, daily prices between a two-year low of $97.02 and $97.87 per barrel. The contract's premium to November WTI widened to $6.60. The European brand dropped ~3.7% last week.

Several key downbeat China gauges weighed on crude, as traders price in a lower demand outlook for the world's second-top oil-consuming economy. Industrial production, which accounts for about half of Chinese GDP and is a major driver for domestic oil consumption, logged 6.9% annual growth, the lowest in almost six year, nosediving after last month's 9.0% rate and falling well-short of expected 8.8%.

Meanwhile, retail sales and fixed asset investments were also recorded lower than expected, adding 11.9% and 16.5%, respectively.

"The major news is the data out of China," Ric Spooner, a chief strategist at CMC Markets in Sydney, said for Bloomberg. "It means potentially another area of moderation in overall oil demand."

China will consume about 11% of all oil this year, according to the International Energy Agency (IEA).

Outlooks

Last week the IEA lowered its forecasts for oil demand growth for this year and 2015 by 150 000 and 100 000, respectively, to 900 000 in 2014 and 1.2m next year.

Meanwhile, Saudi Arabia said it is not planning a cut in output to accommodate a higher global price for crude, dispelling speculation that such a move will come to support prices soon. The country did, however, report a slowdown in production for August, though growing exports from Iraq and Libya more than accounted for it.

OPEC also lowered the projected volume of crude it would market next year, as global demand was seen slowing, supporting IEA's outlook.

"The recent slowdown in demand growth is nothing short of remarkable," the agency said.

IEA's forecast cut comes as a separate US outlook proposed growing supplies, further pressuring crude. The Energy Department's statistics arm, the Energy Information Administration, said oil prices next year will be lower as US crude output reaches a 45-year peak.

"We're in a situation where the demand, supply scenario is fairly weak," Spooner added for Bloomberg. "The market is stripping out a lot of the geopolitical risk premium."

Ukraine

Ukraine was still on the radar, after the EU introduced fresh sanctions against Moscow on Friday, aimed directly at Russian state-owned oil companies. The measures deny companies like Rosneft and

Gazprom Neft access to European capital markets and oil-related technology, significantly limiting their expansion capabilities.

The market was complacent about any immediate negative ramifications on a global scale, though, keeping the risk premium on a minimum level.

The Kremlin said it would respond to the new sanctions.

Meanwhile, the truce between Kiev and pro-Russian rebels was largely holding, though both sides seemed as distant from a peaceful resolution, with separatists calling for complete independence and Kiev even vowing to bring Crimea, the Black Sea peninsula annexed by Russia in March, back to Ukraine.

Technical support and resistance levels

According to Binary Tribune's daily analysis for Monday, West Texas Intermediate October futures' central pivot point is at $92.63. In case the contract breaches the first resistance level at $93.31, it will probably continue up to test $94.34. Should the second key resistance be broken, the US benchmark will most likely attempt to advance to $95.02.

If the contract manages to breach the first key support at $91.60, it will probably continue to drop and test $90.92. With this second key support broken, movement to the downside will probably continue to $89.89.

Meanwhile, November Brent's central pivot point is projected at $98.41. The contract will see its first resistance level at $99.14. If breached, it will probably rise and test $100.33. In case the second key resistance is broken, the European crude benchmark will probably attempt to advance to $101.06.

If Brent manages to penetrate the first key support at $97.22, it will likely continue down to test $96.49. With the second support broken, downside movement may extend to $95.30 per barrel.

Author: Veselin Valchev Veselin is a financial news writer and editor at Binary Tribune, following the commodities spot and reporting on pricing and tendencies on the futures market.